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	First Named Inventor	Miroslav Svajda	
	Art Unit	2643	
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application No. : 09/970,399  
Applicants : Miroslav Švajda  
Alwin Fransen  
Filed : October 3, 2001  
Title : Integrated Telecoil Amplifier with Signal Processing  
  
TC/A.U. : 2643  
Examiner : Suhan Ni  
  
Docket No. : 47161-00016  
Customer No. : 30,223

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Adrienne White

**APPEAL BRIEF PURSUANT TO 37 C.F.R. §§ 1.191 AND 1.192**

Dear Sir:

This Appeal Brief is filed pursuant to the Applicants' appeal to the Board of Patent Appeals and Interferences ("Board") from the final rejection of claims 1-27 and 44-48 in an Office Action dated February 26, 2004. A Notice of Appeal was filed July 9, 2004. The due date for this Appeal Brief is two months from the receipt date by the USPTO of the Notice of Appeal, i.e., September 13, 2004, and this paper is being filed by this due date.

In accordance with 37 C.F.R. § 1.192(a), this brief is being submitted in triplicate.

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## **I. REAL PARTY IN INTEREST**

The real party in interest is SonionMicrotronic Nederland B.V., having a place of business at Zekeringstraat 9, Amsterdam, Netherlands, 1014 BM.

## **II. RELATED APPEALS AND INTERFERENCES**

There are no other appeals or interferences that will directly affect, be directly affected by, or have a bearing on the Board of Patent Appeals and Interferences in the present appeal.

## **III. STATUS OF CLAIMS**

Claims 1-27, 44, and 46-48 are currently pending in the above-referenced application. No claims have been allowed. Claims 28-43, and 45 have been canceled.

The Applicants appeal from the final rejection of claims 1-27, 44, and 46-48. Claims 1-27 and 44-48 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,044,162 to Mead et al. ("Mead") in view of U.S. Patent No. 5,086,464 to Groppe ("Groppe"). The appealed claims are attached as Appendix A. Mead and Groppe are attached as Appendices B and C, respectively. A copy of the Office Action mailed February 26, 2004, that finally rejected the claims is attached as Appendix D.

## **IV. STATUS OF AMENDMENTS**

The Applicant filed a Reply After Final, mailed on April 28, 2004, in response to the final Office Action mailed February 26, 2004. A copy of the Reply After Final is attached as Appendix E. In the Reply after Final, the Applicant amended claim 44 to include the limitations of claim 45, and the Applicant cancelled claim 45. In an Advisory Action mailed May 19, 2004, the Examiner maintained the rejection of all pending claims. A copy of the Advisory Action is attached as Appendix F.

## **V. SUMMARY OF INVENTION**

The present invention is directed to a hearing aid or listening device that uses an integrated amplifier with a telecoil. Specification, page 1, ¶ 2. The listening device can further be used to process both audio and non-audio frequency signals. *Id.* at ¶ 10. The device of the present invention can therefore be used with a telephone or with a microphone to process audio signals without background audio noises. *Id.* at ¶ 5-6. The device of the present invention can also be used to process non-audio signals from a remote control device or programming equipment to program the hearing aid or listening device. *Id.* at ¶ 7.

According to one embodiment of the invention, the listening device has two signal paths within the integrated telecoil amplifier. Figure 3; Specification, page 2, ¶7. A signal input amplifier processes the signal and sends the signal to two separate filters, one dedicated to processing audio frequencies and the other dedicated to processing non-audio or control band frequencies. Specification, page 2, ¶ 28. Another embodiment of the invention also includes a capacitor in parallel with the telecoil to increase the sensitivity of the telecoil to non-audio frequencies. *Id.* at ¶ 29.

## **VI. ISSUES**

The issue in this Appeal is whether claims 1-27, 44, and 46-48 are patentable under 35 U.S.C. § 103(a) over Mead in view of Groppe.

## **VII. GROUPING OF CLAIMS**

Claims 1-16 stand or fall together because they involve using a telecoil in combination with an integrated circuit to process audio signals. Claims 17-27, 44, and 46-47 stand or fall together because they involve using a telecoil in combination with an integrated circuit to process both audio and non-audio signals. Claim 48 stands or falls separately because it involves using a

telecoil in combination with an integrated circuit to process both audio and non-audio signals and further includes a hybrid circuit placed on a common miniature device that fits within a hearing aid.

## VIII. ARGUMENT

Claims 1-27, 44, and 46-48 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Mead in view of Groppe. The rejection should be reversed because: (1) the references do not teach all the elements of certain claims; (2) the Examiner relied on common knowledge or well-known prior art not in the record; and (3) the references do not suggest or motivate one of ordinary skill in the art to combine the reference teachings.

### A. The Law Of Obviousness

Obviousness requires that all the limitations of a claim must be taught or suggested by the prior art. M.P.E.P. § 2143.03 (citing *In re Royka*, 490 F.2d 981, 985, 180 U.S.P.Q. 580, 583 (C.C.P.A. 1974)). A *prima facie* case of obviousness requires three basic criteria.

First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure.

M.P.E.P. § 2143 (citing *In re Vaeck*, 947 F.2d 488, 493, 20 U.S.P.Q.2d 1438, 1442 (Fed. Cir. 1991)).

Although a prior art reference may be modified to meet the claimed limitation, the resultant modified reference is not obvious unless the prior art also suggests or motivates the desirability of the modification. *In re Mills*, 916 F.2d 680, 682, 16 U.S.P.Q.2d 1430, 1432 (Fed.

Cir. 1990) (citing *In re Gordon*, 733 F.2d 900, 902, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984)). Obviousness cannot “be established using hindsight or in view of the teachings or suggestions of the invention.” *Ex parte Maguire*, 2002 WL 1801466, at \*4 (Bd. Pat. App. & Inter. 2002) (quoting *Para-Ordnance Mfg. Inc. v. SGS Importers Int’l Inc.*, 73 F.3d 1085, 1087, 37 U.S.P.Q.2d 1237, 1239 (Fed. Cir. 1995), *cert. denied*, 519 U.S. 822 (1996)) (Appendix G). Further, the proposed modification cannot render the prior art “unsatisfactory for its intended purpose” nor can it “change the principle of operation” of a reference. M.P.E.P. § 2143.01 (citing *In re Gordon*, 733 F.2d at 902, 221 U.S.P.Q. at 1127 and *In re Ratti*, 270 F.2d 810, 813, 123 U.S.P.Q. 349, 352 (C.C.P.A. 1959)).

Additionally, it is rarely appropriate for an Examiner to rely on common knowledge or well-known prior art not supported by documentary evidence, when an application is under final rejection. M.P.E.P. § 2144.03. An Examiner can generally only rely on unsupported common knowledge or well-known prior art when the facts asserted are “capable of instant and unquestionable demonstration as being well-known.” *Id.* (citing *In re Ahlert*, 424 F.2d 1088, 1091, 165 U.S.P.Q. 418, 420 (C.C.P.A. 1970)). Further, “[i]t is never appropriate to rely solely on common knowledge in the art without evidentiary support in the record as the principal evidence upon which a rejection was based.” *Id.* (citing *In re Zurko*, 258 F.3d 1379, 1386, 59 U.S.P.Q.2d 1693, 1697 (Fed. Cir. 2001) and *In re Ahlert*, 424 F.2d at 1092, 165 U.S.P.Q. at 421).

**B. Claims 1-27, 44, and 46-48 Are Patentable Under 35 U.S.C. § 103(a) Over Mead In View Of Groppe.**

The final Office Action (Appendix D) rejected claims 1-27 and 44-48 under 35 U.S.C. § 103(a) as being unpatentable over Mead in view of Groppe. Mead is directed to a hearing aid system that employs differential signal sampling. Mead, col. 2, ll. 62-65. Groppe is directed to a

telephone headset for the hearing impaired to allow the wearer to hear a telephone conversation in both ears. Groppe, col. 2, ll. 8-30.

However, claims 1-27, 44, and 46-48 are patentable over Mead in view of Groppe because (1) Mead and Groppe do not teach all the elements of certain claims, (2) the Examiner relied on common knowledge or well-known prior art not in the record, and (3) the references do not suggest or motivate one of ordinary skill in the art to combine the teachings of Mead and Groppe. Therefore, the Examiner failed to make out a *prima facie* case of obviousness, and the Board should reverse the rejection of claims 1-27, 44, and 46-48.

**1. Mead and Groppe, in combination, do not disclose all the elements of certain claims.**

- a. Mead and Groppe do not disclose a telecoil that outputs both audio and non-audio frequencies, as required by claims 17, 44, and 48 and their dependent claims.*

The applicant has claimed a telecoil that, *inter alia*, outputs both audio and non-audio frequencies. However, Mead and Groppe, even considered as a whole, fail to disclose a telecoil that outputs both audio and non-audio frequency signals. Therefore, the Board should reverse the rejection of claims that require non-audio signal processing.

Non-audio or control band frequency signals are distinct from audio frequency signals, which have a range of, for example, approximately 20 Hz to 10 kHz. Specification, page 2, ¶ 28. The patent specification discloses an example of non-audio frequency signals as falling within the range of 30 kHz to 300 kHz, outside the audio frequency range, which can be used, for example, for programming or controlling the hearing aid. *Id.*

Claims 17, 44, and 48 call for a non-audio frequency signal or a control band frequency output. Claim 17 requires a telecoil that produces electrical output signals “including an audio frequency signal and a non-audio frequency signal” and requires an integrated circuit with “a first

filter for passing said audio frequency signal, and a second filter for passing said non-audio frequency signal.” Claim 48 similarly requires a telecoil that produces electrical output signals “including an audio frequency signal and a non-audio frequency signal.” Additionally, claim 44, as amended, requires a “digital signal into at least two digital outputs, one of said at least two digital outputs being an audio frequency band output, another of said at least two digital outputs being a control band frequency output” and further requires “operating said listening device in a manner corresponding to said control band frequency output.”

Additionally, dependent claims 18, 24, 25, and 26 all contain explicit limitations for processing a non-audio frequency signal. Specifically, claim 18 requires, “said integrated circuit includes a third filter for passing said second non-audio frequency signal”; claim 24 requires, “an analog-to-digital converter for providing a digital output of said non-audio frequency signal”; claim 25 requires, “a microcontroller for processing said non-audio frequency signal, said microcontroller providing functions for the operation of said hearing aid in response to said non-audio frequency signal”; and claim 26 requires, “a capacitor connected in parallel with said telecoil for increasing the sensitivity of the telecoil to the non-audio frequency signal.” Therefore, the language of these claims includes requirements for processing non-audio frequency signals.

Significantly, neither Mead nor Groppe discloses a telecoil that outputs both audio and non-audio frequency signals. Mead explicitly provides that “an input transducer 12 converts acoustical energy into an analog electrical signal.” Mead, col. 5, ll. 43-44 (emphasis added). Acoustical energy exists in the audio frequency range, not in the non-audio frequency range. The two groups of bandpass filters, shown in FIG. 8 of Mead, process signals with frequencies above and below the resonance of the iron-armature transducer 12, or 1 kHz in the example provided,



which falls within the audio frequency range. Mead, col. 18, ll. 15-25, 37-53. Moreover, according to Mead, the signals passed to the bandpass filters are representative of acoustical energy: “In hearing compensation system 110, an electret microphone transduces acoustical energy into an electrical signal,  $s(t)$ , that is fed through preamplifier 130 to differential A/D converter 132.” Mead, col. 18, ll. 42-44.

Groppe discloses that the telephone headset 20 is placed against a telephone receiver T for magnetic induction pickup in a conventional manner. Groppe, col. 2, ll. 42-55. Such arrangement permits an “amplified telephone conversation” (*i.e.*, a conversation in the audio frequency range) to be transmitted into the wearer’s ear. Groppe, col. 2, ll. 48-50. Furthermore, no filter is disclosed or suggested in Groppe, let alone a filter that passes a non-audio frequency signal as required by Claim 17.

Thus, both Mead and Groppe disclose processing audio frequency signals only, and neither discloses processing non-audio frequency signals (claims 17 and 48) or operating a listening device in a manner corresponding to a control band frequency output (claim 44). Thus, neither Mead nor Groppe teaches or discloses a telecoil producing, *inter alia*, a non-audio frequency signal as called for by claims 17 and 48 or a second filter for passing such non-audio frequency signal as called for by claim 17. Nothing in Mead or Groppe teaches or suggests a listening device that processes a control band frequency output, which is distinct from an audio frequency band output. *See, e.g.*, Applicants’ Specification, page 2, ¶ 28. Because the combination of Mead and Groppe fails to disclose every element of claims 17, 44, and 48, the rejection of these claims for obviousness must be reversed.

Furthermore, neither Mead nor Groppe could be modified to function outside of acoustical frequencies without completely altering the principle of operation of the Mead and

Groppe devices and without a substantial redesign. As such, Mead and Groppe are insufficient to render the claims obvious for this additional reason. *In re Ratti*, 270 F.2d 810, 813 (C.C.P.A. 1959).

The only source that teaches the handling of non-audio frequency signals in a telecoil system or operating a listening device in a manner corresponding to a control band frequency output is Applicants' own disclosure, and reliance on such disclosure to reject claims 17, 44, and 48 would be improperly based on impermissible hindsight reconstruction. Since neither Mead nor Groppe discloses handling non-audio frequencies, the Board should reverse the rejection of claims 17, 44, and 48 and their associated dependent claims.

*b. Mead and Groppe do not disclose differentially or single-ended coupling of the telecoil and amplifier, as required by claims 19-20.*

Mead and Groppe also do not disclose differentially or single-ended coupling of the telecoil and amplifier. Claim 19 requires that "said telecoil and said amplifier are coupled differentially," and claim 20 requires that "said telecoil and said amplifier are coupled in a single-ended fashion."

However, neither Mead nor Groppe discloses differential or single-ended coupling of a telecoil and an amplifier in a telecoil system. The Examiner rejected these claims because Mead allegedly discloses "a third filter (116-3) for receiving the first amplified signal and for generating a third filtered signal as claimed." Final Rejection, at 4. However, the Examiner made no mention of the claimed differential or single-ended coupling, and thus, the stated reason for this rejection is not proper. Because neither Mead nor Groppe disclose differential or single-ended coupling of a telecoil and an amplifier in a telecoil system, the Board should reverse the rejection of claims 19-20.

- c. *Mead and Groppe do not disclose integrating an amplifier and filter onto an integrated circuit in a telecoil system, as required by claims 1,8, and 15.*

Claims 1, 8, 15, and 17 call for integrating an amplifier and filter onto an integrated circuit (“IC”) in a telecoil system. The Examiner acknowledged that nothing in Mead or Groppe discloses an IC as claimed. Final Rejection, at 3. Thus, because Mead and Groppe considered as a whole do not disclose an IC as claimed, the combination fails to teach or suggest all of the claim elements. Only Applicants’ disclosure discloses such a combination, and the Board should reverse the Examiner’s rejection of claims 1, 8, 15, and 17.

**2. The Examiner Improperly Relied on Common Knowledge or Well-Known Prior Art Not in the Record.**

Since elements of the claims are not disclosed in Mead or Groppe, the Examiner relied on common knowledge and well-known prior art. However, the Examiner failed to document the assertions that the missing claim elements are common knowledge or well-known prior art. Therefore, the Board should reverse the rejection of the claims.

The Examiner rejected the claims because “providing IC technology for a hearing device is very well known in the art, [and] it would therefore have been obvious to one skilled in the art at the time the invention was made to be motivated to provide a IC including all necessary elements for the hearing device, in order to provide a more integrated and size reduced hearing device, also with less power consumption.” Final Rejection, at 3. Thus, the Examiner pointed to nothing in Mead or Groppe to support this assertion, but presumably based the assertion only on common knowledge or well-known prior art. In the Reply to the Initial Office Action, Applicants properly challenged these assertions by noting that the record contained no evidence that it was very well known to provide an integrated or hybrid circuit with a telecoil as claimed. Reply, at 7-8; *see* M.P.E.P. § 2144.03. At present, the only disclosure in the record of a telecoil

system having an amplifier and filter integrated onto an IC is Applicants' own disclosure. Applicants' challenge remains unaddressed, and the Board should reverse the Examiner's rejection of claims 1, 8, 15, 17, and their associated dependent claims for at least this reason.

Additionally, the Examiner rejected claims 7, 14, 16, and 27 on the basis that "providing a center-tapped telecoil as claimed for a hearing device is very well known in the art, [and] it therefore would have been obvious to one skilled in the art at the time the invention was made to be motivated to provide the center-tapped telecoil with two signal output terminals for the hearing device, in order to provide users a wireless communication hearing device with desirable acoustic characteristics." Final Rejection, at 4 (emphasis added). Because neither Mead nor Groppe discloses a center-tapped telecoil, the Examiner relied on common knowledge or well-known prior art but failed to produce authority or substantial evidence to support the rationale that providing a center-tapped telecoil with an integrated circuit in the claimed telecoil system would have been obvious to a skilled artisan. Even if center-tapped telecoils generally are well known in the art, the Examiner pointed to no suggestion or motivation for the desirability of combining a center-tapped telecoil with an amplifier and filter integrated onto an IC as claimed. Just because something is well known in the art does not necessarily mean that the well known device in combination with something else would be obvious, absent some suggestion or motivation in the knowledge generally available to one of ordinary skill in the art to modify or combine reference teachings. Without such a suggestion or motivation, neither of which is present here, claims 7, 14, 16, and 27 are not obvious, and the Board should reverse the rejection of claims 7, 14, 16, and 27.

### 3. No Suggestion Or Motivation To Combine The References

In order to establish a *prima facie* case of obviousness, there must be a motivation or suggestion to combine the references. However, the Examiner has not presented any such motivation or suggestion. Therefore, the Board should reverse the final rejection.

The claims are patentable over Mead in view of Groppe because there is no evidence to suggest the desirability of the combinations and methods as claimed. As mentioned above, the Examiner acknowledged that Mead does not teach a telecoil or an integrated or hybrid circuit as claimed. Final Rejection, at 2-3. Groppe does not disclose a filter or an integrated or hybrid circuit as claimed. Thus, the combination of Mead and Groppe fails to teach or disclose the combination of a telecoil with an integrated or hybrid circuit as claimed. The Office Actions identify nothing that would suggest or motivate the desirability of the combination except that ICs are well known in the art.

However, even if telecoils or integrated circuits individually are very well known in the art, the Examiner must show that the prior art contains some suggestion or motivation for the combination of a telecoil as claimed with an amplifier and filter integrated onto an IC. M.P.E.P. § 2143.01. The mere fact that these components can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680 (Fed. Cir. 1990). Here, nothing (except Applicants' own teaching) has been shown to suggest the desirability of combining a telecoil with an amplifier and filter integrated onto an IC as claimed, and therefore, a *prima facie* case of obviousness has not been made regarding claims 1, 8, 15, 17, and 48.

Additionally, claims 2-6 call for one or more additional amplifiers, filters, and signal processors to be integrated onto the IC of claim 1. Because it would not have been obvious to a

skilled artisan to combine a telecoil with an IC having an amplifier and a filter, it also would not have been obvious to integrate the additional components called for in claims 2-6 onto the same IC. Further, claim 18 includes an IC having a first filter, a second filter, and a third filter for passing a non-audio frequency signal. Neither Mead nor Groppe discloses these elements, and it would not have been obvious to a skilled artisan to integrate a third filter onto an integrated circuit having a first filter, a second filter, and a first amplifier as claimed. Also, claims 19-20 disclose differentially or single-ended coupling of a telecoil and an amplifier in a telecoil system. Neither Mead nor Groppe disclose differentially coupling or coupling in a single-ended fashion, and it would not have been obvious to a skilled artisan to couple the claimed telecoil with an amplifier via a differential or single-ended coupling.

Because the Examiner has provided no suggestion or motivation to combine or modify Mead and Groppe to obtain all the elements of the claims, a *prima facie* case of obviousness has not been made.

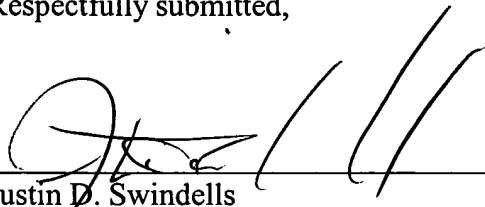
Claims 1-27, 44, and 46-48 should be allowed as patentable over Mead in view of Groppe, and the Board should reverse the Examiner's final rejection.

## **IX. CONCLUSION**

For at least the foregoing reasons, the final rejection of appealed claims 1-27, 44 and 46-48 set forth in the Office Action mailed February 26, 2004, should be reversed.

Respectfully submitted,

Date: September 13, 2004



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## **APPEALED CLAIMS**

1. (Original) An integrated amplified telecoil system, comprising:
  - a telecoil for producing an electrical output signal in response to electromagnetic radiation;
  - a first amplifier receiving said electrical output signal and having a first amplifier output producing a first amplified signal; and
  - a first filter having a selected pass band in an audio frequency range integrated into an integrated circuit with said first amplifier, said first filter coupled to said first amplifier output for receiving said first amplified signal and having a first filter output producing a first filtered signal.
2. (Original) The system of claim 1, further including a second amplifier integrated onto said integrated circuit with said first amplifier and said first filter, said second amplifier receiving said first filter signal and producing a second amplified output signal.
3. (Original) The system of claim 2, wherein said second amplifier is a signal processor.
4. (Original) The system of claim 1, further including a second filter on said integrated circuit and having a pass band different from said selected pass band of said first filter, said second filter receiving said first amplified signal and producing a second filtered signal.
5. (Original) The system of claim 4, further including a third amplifier for receiving said second filtered signal and producing a third amplified output signal.
6. (Original) The system of claim 5, wherein said third amplifier is realized as a signal processor.
7. (Original) The system of claim 1, wherein said telecoil is a center-tapped telecoil for producing two electrical output signals received by said first amplifier.



8. (Original) A method of operating a listening device, comprising:  
converting electromagnetic radiation to electrical signals;  
amplifying said electrical signals to produce first amplified signals; and  
filtering said first amplified signals in an audio frequency range to produce first filtered signals, wherein said amplifying and said filtering are performed on a single integrated circuit.
9. (Original) The method of claim 8, further including amplifying, on said single integrated circuit, said first filtered signals.
10. (Original) The method of claim 9, wherein said amplifying said first filtered signals includes processing said first filtered signals.
11. (Original) The method of claim 8, further including filtering, on said single integrated circuit, said amplified signal with a pass band different from the pass band of said first filtering to produce second filtered signals.
12. (Original) The method of claim 11, further including amplifying, on said single integrated circuit, said second filtered signals.
13. (Original) The method of claim 12, wherein said amplifying said second filtered signals includes processing said second filtered signals.
14. (Original) The method of claim 8, wherein said converting is performed by a center-tapped telecoil.
15. (Original) A telecoil system for a listening device, comprising:  
a telecoil for producing electrical output signals in response to being exposed to an electromagnetic field; and

an integrated circuit receiving said electrical output signals, said integrated circuit including an amplifier providing amplified electrical output signals and a filter for passing selected signals from said amplified electrical output signals, said selected signals being in a range from about 20 Hz to about 10 kHz.

16. (Original) The telecoil system of claim 15, wherein said telecoil is a center-tapped telecoil producing two electrical signals to be differentially processed by said integrated circuit.

17. (Previously Presented) A telecoil system for a hearing aid, comprising:  
a telecoil for producing electrical output signals in response to being exposed to an electromagnetic field, said electrical output signals including an audio frequency signal and a non-audio frequency signal; and  
an integrated circuit having an amplifier for amplifying said electrical output signal, a first filter for passing said audio frequency signal, and a second filter for passing said non-audio frequency signal.

18. (Original) The telecoil system of claim 17, wherein said electrical output signals further include a second non-audio frequency signal and said integrated circuit includes a third filter for passing said second non-audio frequency signal.

19. (Original) The telecoil system of claim 17, wherein said telecoil and said amplifier are coupled differentially.

20. (Original) The telecoil system of claim 17, wherein said telecoil and said amplifier are coupled in a single-ended fashion.

21. (Original) The telecoil system of claim 17, further including electrostatic discharge protection circuitry.

22. (Original) The telecoil system of claim 17, further including electromagnetic interference protection circuitry.

23. (Original) The telecoil system of claim 17, further including an analog-to-digital converter for providing a digital output of said audio frequency signal.
24. (Original) The telecoil system of claim 17, further including an analog-to-digital converter for providing a digital output of said non-audio frequency signal.
25. (Original) The telecoil system of claim 17, further including a microcontroller for processing said non-audio frequency signal, said microcontroller providing functions for the operation of said hearing aid in response to said non-audio frequency signal.
26. (Original) The telecoil system of claim 17, further including a capacitor connected in parallel with said telecoil for increasing the sensitivity of the telecoil to the non-audio frequency signal.
27. (Original) The telecoil system of claim 17, wherein said telecoil is a center-tapped telecoil producing two electrical signals to be differentially processed by said integrated circuit.
44. (Previously Presented) A method of operating a listening device, comprising:  
converting electromagnetic radiation to an analog electrical signal with a telecoil;  
receiving said analog electrical signal in an integrated circuit;  
amplifying, in said integrated circuit, said analog electrical signal to develop an amplified analog signal;  
converting, in said integrated circuit, said amplified analog signal to a digital signal;  
processing, in said integrated circuit, said digital signal into at least two digital outputs, one of said at least two digital outputs being an audio frequency band output, another of said at least two digital outputs being a control band frequency output; and  
operating said listening device in a manner corresponding to said control band frequency output.

46. (Original) The method of claim 44, wherein said converting is by an analog-to-digital converter operating at a high rate to gather high-frequency signals.
47. (Original) The method of claim 46, wherein said rate is about 1 MHz.
48. (Original) A telecoil system for a listening device, comprising:
- a telecoil for producing electrical output signals in response to being exposed to an electromagnetic field, said electrical output signals including an audio frequency signal and a non-audio frequency signal; and
  - a hybrid circuit including at least one integrated circuit placed on a common miniature device that fits within a hearing aid, said hybrid circuit having an amplifier for amplifying said electrical output signal and at least one filter for passing said audio frequency signal.



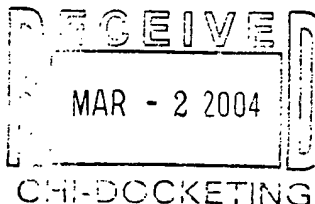
## UNITED STATES PATENT AND TRADEMARK OFFICE

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Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/970,399	10/03/2001	Miroslav Svajda	47161-00016	9667

30223 7590 02/26/2004

JENKENS & GILCHRIST, P.C.  
225 WEST WASHINGTON  
SUITE 2600  
CHICAGO, IL 60606



EXAMINER

NI, SUHAN

ART UNIT PAPER NUMBER

2643

DATE MAILED: 02/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

DOCKETED  
INIT FB DATE: 3/2/04  
ACTION: Resp. to Office - 4/26/04  
3 month Final - 5/26/04  
Deadline - 8/26/04



## Office Action Summary

Application No.

09/970,399

Applicant(s)

SVAJDA ET AL.

Examiner

Suhan Ni

Art Unit

2643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) 28-43 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 and 44-48 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. This communication is responsive to the amendment filed 11/03/2003.
2. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).
3. A complete reply to a future final office action must include **cancellation of non-elected claims** or other appropriate action (37 CFR 1.144). See MPEP § 821.01.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-27 and 44-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mead et al. (U. S. Pat. - 6,044,162) in view of Groppe (U. S. Pat. - 5,086,464).

Regarding claims 1, 15, 17 and 48, Mead et al. disclose a hearing device, comprising: an input transducer (128) for generating an electrical output signal; a first amplifier (130) for receiving the electrical output signal of the transducer and for generating an amplified signal; and a first filter (116-1) for receiving the amplified signal of the amplifier and for generating an filtered signal. But Mead et al. do not specially teach a telecoil type input transducer as claimed.

Groppe discloses a similar hearing device, comprising a telecoil type input transducer for inductively pickup input signal. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to be motivated to provide the inductive pickup transducer taught by Groppe for the hearing device as an alternate choice, for providing a wireless communication for the user.

Moreover, Mead et al. do not clearly teach an IC as claimed. Since providing IC technology for a hearing device is very well known in the art, it therefore would have been obvious to one skilled in the art at the time the invention was made to be motivated to provide a IC including all necessary elements for the hearing device, in order to provide a more integrated and size reduced hearing device, also with less power consumption.

Furthermore, Mead et al. do not clearly teach the frequency response rang for the filter as claimed. Since selecting a filter with desirable characteristics, such as frequency response for specific application is very well known in the art, it therefore would have been obvious to one skilled in the art at the time the invention was made to be motivated to provide a filter with desirable pass band for the processing IC of the hearing device, in order to provide desirable acoustic effect for different hearing applications.

Regarding claims 2-3, Mead et al. further disclose the hearing device, wherein the device includes a second amplifier (118-1) for receiving the first filtered signal and for generating a second amplified signal as claimed.

Regarding claim 4, Mead et al. further disclose the hearing device, wherein the device includes a second filter (116-2) for receiving the first amplified signal and for generating a second filtered signal as claimed.



Regarding claims 5-6, Mead et al. further disclose the hearing device, wherein the device includes a third amplifier (118-2) for receiving the second filtered signal and for generating an third amplified signal as claimed.

Regarding claims 7, 16 and 26-27, neither Mead et al. nor Groppe specially teach the details of the telecoil type input transducer as claimed. Since providing a center-tapped telecoil as claimed for a hearing device is very well known in the art, it therefore would have been obvious to one skilled in the art at the time the invention was made to be motivated to provide the center-tapped telecoil with two signal output terminals for the hearing device, in order to provide users a wireless communication hearing device with desirable acoustic characteristics.

Method claims 8-14 are similar to claims 1-7 except for being couched in method terminology, such methods would be inherent when the structure is shown in the cited references.

Regarding claims 18-20, Mead et al. further disclose the hearing device, wherein the device includes a third filter (116-3) for receiving the first amplified signal and for generating a third filtered signal as claimed.

Regarding claims 21-22, neither Mead et al. nor Groppe specially teach a protection circuitry for the processing IC of the hearing device as claimed. Since providing a protective element for a processing circuit for a hearing device is very well known in the art, it therefore would have been obvious to one skilled in the art at the time the invention was made to be motivated to provide the protective element for the processing IC of the hearing device, in order to provide the hearing device with protective features, and make the hearing device more durable.

Regarding claims 23-24, Mead et al. further disclose the hearing device, wherein the device includes an A/D (132) and a D/A (124) converter for DSP.

Regarding claim 25, Mead et al. further disclose the hearing device, wherein the device includes a plurality of controllers (44) for controlling an incoming signal as claimed.

Method claims 44-47 are similar to claims 15-27 except for being couched in method terminology, such methods would be inherent when the structure is shown in the cited references.

***Response to Amendment***

5. Applicant's arguments dated 11/03/2003 have been fully considered, but they are not deemed to be persuasive.

Regarding claims 1, 15, 17 and 48, in the cited prior art, Mead et al. disclose a hearing device, comprising: an input transducer for generating an electrical output signal; a first amplifier for receiving the electrical output signal of the transducer and for generating an amplified signal; and a first filter for receiving the amplified signal of the amplifier and for generating an filtered signal. But Mead et al. do not specially teach a telecoil type input transducer as claimed. Groppe discloses a similar hearing device, comprising a telecoil type input transducer for inductively pickup input signal. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to be motivated to provide the inductive pickup transducer taught by Groppe for the hearing device as an alternate choice, for providing a wireless communication for the user. Furthermore, Mead et al. do not clearly teach an IC as claimed. Since providing IC technology for a hearing device is very well known in the art, it therefore would have been obvious to one skilled in the art at the time the invention was made to be motivated to provide a

IC including all necessary elements for the hearing device, in order to provide a more integrated and size reduced hearing device, also with less power consumption. Moreover, Mead et al. do not clearly teach the frequency response rang for the filter as claimed. Since selecting a filter with desirable characteristics, such as frequency response for specific application is very well known in the art, it therefore would have been obvious to one skilled in the art at the time the invention was made to be motivated to provide a filter with desirable pass band for the processing IC of the hearing device, in order to provide desirable acoustic effect for different hearing applications.

Regarding claims 1, 15, 17 and 48, the applicants argue no motivation to combine the references. It is not necessary that the references actually suggest, expressly or in so many words the changes or improvements that applicants have made. The test for combining references is what the references as whole would have suggested to one of ordinary skilled in the art. **In re Sheckler, 168 USPQ 716 (CCPA 1971); In re Mlaughlin 170 USPQ 209 (CCPA 1971); In re Young 159 USPQ 715 (CCPA 1968).**

As to the combination of Mead et al. and Groppe has failed to teach applicants' claimed invention, but the Examiner respectfully disagrees with the applicants, since the combination of these references clearly teaches the recited claim limitations.

Method claims 8-14 and 44-47 are similar to claims 1-7, 15-27 and 48 except for being couched in method terminology; such methods would be inherent when the structure is shown in the references.

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***Conclusion***

6. **THIS ACTION IS MADE FINAL.** See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

7. Any response to this final action should be mailed to:

**Commissioner of Patents and Trademarks  
Washington, D.C. 20231**

Or faxed to:

**(703) 308-9051**, (for formal communications; please mark "EXPEDITED PROCEDURE"), or

**(703) 305-9508**, (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to:

**Receptionist, Sixth Floor,  
Crystal Park II,  
2121 Crystal Drive,  
Arlington, Virginia 22202**

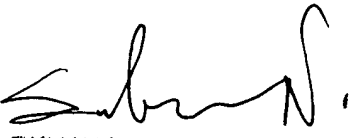
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Suhan Ni** whose telephone number is **(703)-308-9322**, and the number for fax machine is **(703)-305-9508**. The examiner can normally be reached on Monday

Art Unit: 2643

through Thursday from 9:00 am to 7:30 pm. If it is necessary, the examiner's supervisor, **Curtis Kuntz**, can be reached at **(703) 305-4708**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is **(703) 305-3900**.

Suhan Ni  
Patent Examiner  
Art Unit 2643  
USPTO



SUHAN NI  
PATENT EXAMINER

February 19, 2004

<b>Notice of References Cited</b>	Application/Control No. 09/970,399	Applicant(s)/Patent Under Reexamination SVAJDA ET AL.	
	Examiner Suhan Ni	Art Unit 2643	Page 1 of 1

#### U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-3,659,056	04-1972	Morrison et al.	381/315
	B	US-5,217,011	06-1993	Bisch, Michael E.	607/51
	C	US-6,078,675	06-2000	Bowen-Nielsen et al.	381/331
	D	US-6,157,728	12-2000	Tong et al.	381/331
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

#### FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

#### NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a) )  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.



**MAIL STOP AF  
RESPONSE UNDER 37 C.F.R. § 1.116  
EXPEDITED PROCEDURE  
EXAMINING GROUP 3713**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Application : 09/970,399  
Number  
Applicant : Miroslav Švajda  
Alwin Fransen

Confirmation : 9667  
Number

Filed : October 3, 2001  
TC/A.U. : 2643  
Examiner : Suhan Ni

Docket Number : 47161-00016  
Customer Number : 30,223

**AMENDMENT AND REPLY TO FINAL OFFICE ACTION**  
**DATED FEBRUARY 26, 2004**

**EL831840903US**

Mail Stop After Final  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

**CERTIFICATE OF MAILING 37 C.F.R. 1.8**

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Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450

4/28/2004  
Date

*Adrienne White*  
Adrienne White

Dear Sir:

This paper is in response to the Final Office Action dated February 26, 2004. The shortened statutory period for response is three months from the mailing date, i.e., by May 26, 2004. Please enter the following amendments and remarks into the record for this application.

**A Listing of Claims** begins on page 2 of this paper.

**Remarks/Arguments** begin on page 7 of this paper.

**Listing Of Claims:**

This listing of claims will replace all prior versions and listings of claims.

1. (Original) An integrated amplified telecoil system, comprising:  
a telecoil for producing an electrical output signal in response to electromagnetic radiation;  
a first amplifier receiving said electrical output signal and having a first amplifier output producing a first amplified signal; and  
a first filter having a selected pass band in an audio frequency range integrated into an integrated circuit with said first amplifier, said first filter coupled to said first amplifier output for receiving said first amplified signal and having a first filter output producing a first filtered signal.
2. (Original) The system of claim 1, further including a second amplifier integrated onto said integrated circuit with said first amplifier and said first filter, said second amplifier receiving said first filter signal and producing a second amplified output signal.
3. (Original) The system of claim 2, wherein said second amplifier is a signal processor.
4. (Original) The system of claim 1, further including a second filter on said integrated circuit and having a pass band different from said selected pass band of said first filter, said second filter receiving said first amplified signal and producing a second filtered signal.
5. (Original) The system of claim 4, further including a third amplifier for receiving said second filtered signal and producing a third amplified output signal.
6. (Original) The system of claim 5, wherein said third amplifier is realized as a signal processor.



7. (Original) The system of claim 1, wherein said telecoil is a center-tapped telecoil for producing two electrical output signals received by said first amplifier.
8. (Original) A method of operating a listening device, comprising:  
converting electromagnetic radiation to electrical signals;  
amplifying said electrical signals to produce first amplified signals; and  
filtering said first amplified signals in an audio frequency range to produce first filtered signals, wherein said amplifying and said filtering are performed on a single integrated circuit.
9. (Original) The method of claim 8, further including amplifying, on said single integrated circuit, said first filtered signals.
10. (Original) The method of claim 9, wherein said amplifying said first filtered signals includes processing said first filtered signals.
11. (Original) The method of claim 8, further including filtering, on said single integrated circuit, said amplified signal with a pass band different from the pass band of said first filtering to produce second filtered signals.
12. (Original) The method of claim 11, further including amplifying, on said single integrated circuit, said second filtered signals.
13. (Original) The method of claim 12, wherein said amplifying said second filtered signals includes processing said second filtered signals.
14. (Original) The method of claim 8, wherein said converting is performed by a center-tapped telecoil.
15. (Original) A telecoil system for a listening device, comprising:

- a telecoil for producing electrical output signals in response to being exposed to an electromagnetic field; and
- an integrated circuit receiving said electrical output signals, said integrated circuit including an amplifier providing amplified electrical output signals and a filter for passing selected signals from said amplified electrical output signals, said selected signals being in a range from about 20 Hz to about 10 kHz.
16. (Original) The telecoil system of claim 15, wherein said telecoil is a center-tapped telecoil producing two electrical signals to be differentially processed by said integrated circuit.
17. (Previously Presented) A telecoil system for a hearing aid, comprising:
- a telecoil for producing electrical output signals in response to being exposed to an electromagnetic field, said electrical output signals including an audio frequency signal and a non-audio frequency signal; and
- an integrated circuit having an amplifier for amplifying said electrical output signal, a first filter for passing said audio frequency signal, and a second filter for passing said non-audio frequency signal.
18. (Original) The telecoil system of claim 17, wherein said electrical output signals further include a second non-audio frequency signal and said integrated circuit includes a third filter for passing said second non-audio frequency signal.
19. (Original) The telecoil system of claim 17, wherein said telecoil and said amplifier are coupled differentially.
20. (Original) The telecoil system of claim 17, wherein said telecoil and said amplifier are coupled in a single-ended fashion.

21. (Original) The telecoil system of claim 17, further including electrostatic discharge protection circuitry.
22. (Original) The telecoil system of claim 17, further including electromagnetic interference protection circuitry.
23. (Original) The telecoil system of claim 17, further including an analog-to-digital converter for providing a digital output of said audio frequency signal.
24. (Original) The telecoil system of claim 17, further including an analog-to-digital converter for providing a digital output of said non-audio frequency signal.
25. (Original) The telecoil system of claim 17, further including a microcontroller for processing said non-audio frequency signal, said microcontroller providing functions for the operation of said hearing aid in response to said non-audio frequency signal.
26. (Original) The telecoil system of claim 17, further including a capacitor connected in parallel with said telecoil for increasing the sensitivity of the telecoil to the non-audio frequency signal.
27. (Original) The telecoil system of claim 17, wherein said telecoil is a center-tapped telecoil producing two electrical signals to be differentially processed by said integrated circuit.
- 28-43. (Cancelled)
44. (Currently Amended) A method of operating a listening device, comprising:
  - converting electromagnetic radiation to an analog electrical signal with a telecoil;
  - receiving said analog electrical signal in an integrated circuit;
  - amplifying, in said integrated circuit, said analog electrical signal to develop an amplified analog signal;

converting, in said integrated circuit, said amplified analog signal to a digital signal; ~~and~~  
processing, in said integrated circuit, said digital signal into at least two digital outputs,  
one of said at least two digital outputs being an audio ~~and~~ frequency band output,  
another of said at least two digital outputs being a control band frequency output;  
and  
operating said listening device in a manner corresponding to said control band frequency  
output.

45. (Cancelled).

46. (Original) The method of claim 44, wherein said converting is by an analog-to-digital converter operating at a high rate to gather high-frequency signals.

47. (Original) The method of claim 46, wherein said rate is about 1 MHz.

48. (Original) A telecoil system for a listening device, comprising:  
a telecoil for producing electrical output signals in response to being exposed to an electromagnetic field, said electrical output signals including an audio frequency signal and a non-audio frequency signal; and  
a hybrid circuit including at least one integrated circuit placed on a common miniature device that fits within a hearing aid, said hybrid circuit having an amplifier for amplifying said electrical output signal and at least one filter for passing said audio frequency signal.

**REMARKS/ARGUMENTS**

Claims 1-27 and 44-48 remain in the application for further prosecution. Claim 44 has been amended. Please cancel claims 28-43 and 45.

**Claim Amendments**

Claim 44 has been amended to place it in better form for consideration on appeal. Claim 44 has been amended to include the limitations of dependent claim 45, and does not add any new matter. Entry of the amendment is respectfully requested.

**Claim Rejections – 35 U.S.C. § 103**

The Office Action maintains the rejection of Claims 1-27 and 44-48 under 35 U.S.C. § 103(a) as being allegedly unpatentable over Mead (U.S. Patent No. 6,044,162) et al. in view of Groppe (U.S. Patent No. 5,086,464). Applicants respectfully traverse these rejections and submit that the claims are patentable over Mead and Groppe for at least the following reasons.

Section 2141 of the MPEP states that when applying a Section 103 rejection, the following tenets of patent law must be adhered to:

- A. The claimed invention must be considered as a whole;
- B. The references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination;
- C. The references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention; and
- D. Reasonable expectation of success is the standard with which obviousness is determined.

Applicants respectfully submit that these tenets have not been followed in the following respects. First, with respect to independent claims 17, 44, and 48 and associated dependent claims, including claims 18, 24, and 25, Mead and Groppe even considered as a whole fail to disclose a telecoil that outputs both audio and **non-audio** frequency signals. Non-audio frequency signals are distinct from audio frequency signals, which have a range of, for example, approximately 20 Hz to 10 kHz. Page 7, line 3 of the specification discloses an example of non-audio frequency signals as falling within the range of 30 kHz to 300 kHz, outside the audio

frequency range, and can be used, for example, for programming or controlling the hearing aid.  
Page 7, lines 3-10.

The Office Action points to nothing in Mead or Groppe that disclose a telecoil that outputs a non-audio frequency signal and is therefore applying impermissible hindsight vision to reject the claims. Second, a *prima facie* case of obviousness has not been established with respect to the other claims because there is no suggestion or motivation in Mead and Groppe themselves or in the knowledge generally available to one of ordinary skill in the art to modify Mead or Groppe or to combine the teachings of Mead and Groppe in the manner claimed.

All The Elements Recited In Claims 17, 44, And 48 Have Not Been Disclosed  
In The Cited Prior Art

Applicants again respectfully traverse the rejections of claims 17, 44, and 48 and their associated dependent claims. As pointed out in the Reply to the June 4, 2003, Office Action, Mead explicitly provides that “an input transducer 12 converts acoustical energy into an analog electrical signal.” Mead, col. 5, ll. 43-44 (emphasis added). Acoustical energy exists in the **audio** frequency range, not in the non-audio frequency range. Groppe discloses that the telephone headset 20 is placed against a telephone receiver T for magnetic induction pickup in a conventional manner. Such arrangement permits an “amplified telephone conversation” (*i.e.*, a conversation in the audio frequency range) to be transmitted into the wearer’s ear. Col. 2, ll. 42-55. Thus, both Mead and Groppe disclose processing **audio** frequency signals only, and nowhere disclose processing non-audio frequency signals (claims 17 and 48) or control band frequency signals (claim 44).

By contrast, Claim 17 recites:

17. A telecoil system for a hearing aid, comprising:
- a telecoil for producing electrical output signals in response to being exposed to an electromagnetic field, said electrical output signals including an audio frequency signal and a **non-audio frequency signal**; and
  - an integrated circuit having an amplifier for amplifying said electrical output signal, a first filter for passing said audio frequency signal, and a **second filter for passing said non-audio frequency signal**.

Claim 48 recites:

48. A telecoil system for a listening device, comprising:
- a telecoil for producing electrical output signals in response to being exposed to an electromagnetic field, said electrical output signals including an audio frequency signal and a **non-audio frequency signal**; and
  - a hybrid circuit including at least one integrated circuit placed on a common miniature device that fits within a hearing aid, said hybrid circuit having an amplifier for amplifying said electrical output signal and at least one filter for passing said audio frequency signal.

The two groups of bandpass filters shown in FIG. 8 of Mead process signals with frequencies above and below the resonance of the iron-armature transducer 12, or 1 kHz in the example provided. Col. 18, ll. 15-25, 37-53. Moreover, according to Mead, the signals passed to the bandpass signals are representative of **acoustical energy**: "In hearing compensation system 110, an electret microphone transduces **acoustical energy** into an electrical signal,  $s(t)$ , that is fed through preamplifier 130 to differential A/D converter 132." Col. 18, ll. 42-44. With respect to Groppe, no filter is disclosed or suggested in Groppe, let alone a filter that passes a non-audio frequency signal. Thus, neither Mead nor Groppe teaches or discloses a telecoil producing, *inter alia*, a non-audio frequency signal as called for by claims 17 and 48 or a second filter for passing such non-audio frequency signal as called for by claim 48.

Claim 44 as presently amended recites:

44. A method of operating a listening device, comprising:
- converting electromagnetic radiation to an analog electrical signal with a telecoil;
  - receiving said analog electrical signal in an integrated circuit;
  - amplifying, in said integrated circuit, said analog electrical signal to develop an amplified analog signal;
  - converting, in said integrated circuit, said amplified analog signal to a digital signal;
  - processing, in said integrated circuit, said digital signal into at least two digital outputs, one of said at least two digital outputs being an audio frequency band output, another of said at least two digital outputs being a **control band frequency output**; and

**operating said listening device in a manner corresponding to said control band frequency output.**

Nothing in Mead or Groppe teaches or suggests operating a listening device in a manner corresponding to a control band frequency output, which is distinct from an audio frequency band output. *See, e.g.*, Applicants' Specification, page 6, line 34 to page 7, line 3. Because the Mead and Groppe devices function entirely within the acoustical frequency range, a skilled artisan, after reading Mead and Groppe, would not be motivated to modify the references to function outside of the acoustical frequency range. To do so would completely alter the principle of operation of the Mead and Groppe devices and would require a substantial redesign. As such, the teachings of Mead and Groppe are insufficient to render the claims obvious. *In re Ratti*, 270 F.2d 810, 813 (CCPA 1959).

Thus, the only source that teaches the handling of non-audio frequency signals in a telecoil system or operating a listening device in a manner corresponding to a control band frequency output is the Applicants' own disclosure, and reliance on such disclosure to reject claims 17, 44, and 48 would be improperly based on impermissible hindsight reconstruction.

**A Prima Facie Case Of Obviousness Has Not Been Made With Respect To Each Of The Independent Claims Because There Is No Evidence To Suggest The Desirability Of The Claimed Combinations**

Independent of the reasons set forth above with respect to claims 17, 44, and 48, these claims and claims 1, 8, and 15 are patentable over Mead in view of Groppe for at least the reason that there is no evidence to suggest the desirability of the combinations and methods as claimed. The Office Action acknowledges that Mead does not teach a telecoil or an integrated or hybrid circuit as claimed. Groppe does not disclose a filter or an integrated or hybrid circuit as claimed. Thus, the combination of Mead and Groppe fails to teach or disclose the combination of a telecoil with an integrated or hybrid circuit as claimed.

The stated basis for rejecting the claims is that "providing IC technology for a hearing device is very well known in the art, it would therefore have been obvious to one skilled in the art at the time the invention was made to be motivated to provide a IC including all necessary elements for the hearing device, in order to provide a more integrated and size reduced hearing



device, also with less power consumption.” Office Action, at 3. Thus, the Office Action points to nothing in Mead or Groppe to support this assertion, but rather appears to base it upon common knowledge or well-known prior art. In the prior Reply, Applicants properly challenged these assertions by noting that there was no evidence in the record that it was very well known to provide an integrated or hybrid circuit **with a telecoil as claimed**. To the extent that the rejection is based on common knowledge or well-known prior art, the Examiner must produce authority or substantial evidence to support such rejection. MPEP 2144.03.

Applicants submit that it would not have been obvious to a skilled artisan to provide a system having a telecoil and an amplifier and filter integrated onto an integrated circuit. That telecoils or integrated circuits individually may be very well known in the art is not sufficient to hold that a **telecoil as claimed** in combination with an amplifier and filter integrated onto an IC is very well known. There must be some suggestion or motivation to combine these components in the manner claimed. MPEP 2143.01. The mere fact that these components can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680 (Fed. Cir. 1990). Because nothing (except Applicants’ own teaching) has been shown to suggest the desirability of combining a telecoil with an amplifier and filter integrated onto an IC as claimed, a *prima facie* case of obviousness has not been established. For at least these reasons, amended claims 1, 8, and 15, and their respective dependent claims, are believed to be patentable over Mead in view of Groppe.

In the Response to Amendment section of the Office Action, the Examiner notes that the test for combining references is what the references as a whole would have suggested a skilled artisan. Office Action, at 6. However, here, the Office Action expressly acknowledges that the references do not disclose an integrated circuit as claimed. Thus, there is nothing in Mead or Groppe that would have suggested to a skilled artisan to integrate an amplifier and filter onto an integrated circuit in a telecoil system. Because nothing except Applicants’ disclosure suggests the desirability of such a combination, claims 1, 8, and 15 are not obvious.

The dependent claims are allowable for at least the reason that there is no teaching or suggestion of a motivation to combine elements as claimed in the dependent claims

The following dependent claims are believed to be allowable for at least the reason that the independent claim from which they depend is allowable. In addition, they are believed to be allowable for at least the following additional reason(s):

Regarding claims 2-6, these claims call for one or more additional amplifiers, filters, and signal processors to be integrated onto the IC of claim 1. For the same reasons that it would not have been obvious to a skilled artisan to combine a telecoil with an IC having an amplifier and filter, it would not have been obvious to integrate the additional components called for in claims 2-6 onto the same IC.

The Office Action rejected claims 7, 14, 16, and 27 on the basis that "providing a center-tapped telecoil as **claimed** for a hearing device is very well known in the art, it therefore would have been obvious to one skilled in the art at the time the invention was made to be motivated to provide the center-tapped telecoil with two signal output terminals for the hearing device, in order to provide users a wireless communication hearing device with desirable acoustic characteristics." Office Action, at 4. Neither Mead nor Groppe discloses a center-tapped telecoil. To the extent that the rejection is based on common knowledge or well-known prior art, the Examiner must produce authority or substantial evidence to support the rationale that providing a center-tapped telecoil with an integrated circuit as claimed would have been obvious to a skilled artisan. Just because center-tapped telecoils individually may be well known in the art, there has been shown no suggestion for the desirability of combining a center-tapped telecoil with an amplifier and filter integrated onto an IC as claimed. Without such a suggestion, the claims are not obvious. Thus, claims 7, 14, 16, and 27 are believed to be patentable over Mead in view of Groppe.

Regarding claim 26, Groppe does not teach or suggest including a capacitor in parallel with a telecoil for increasing the sensitivity of the telecoil to a non-audio frequency signal. Both Mead and Groppe operate in the audio frequency range, and teach or suggest nothing about operation in a non-audio frequency range.

Regarding claim 18, Mead does not disclose an integrated circuit having a first filter, a second filter, and a third filter for passing a non-audio frequency signal. Mead explicitly teaches

that the input transducer 12 converts acoustical energy into an analog electrical signal. Thus, the bandpass filter 116-3 shown in Mead is passing an audio frequency signal, not a non-audio frequency signal, such as signals used for programming or controlling a hearing aid, as claimed in claim 18. In addition, it would not have been obvious to a skilled artisan to integrate a third filter onto an integrated circuit having a first filter, a second filter, and a first amplifier as claimed.

Regarding claims 19-20, neither Mead nor Groppe discloses differentially or single-ended coupling a telecoil and an amplifier in a telecoil system. The stated reason for rejecting this claim in the Office Action is that Mead allegedly discloses a third filter (116-3) for receiving the first amplified signal and for generating a third filtered signal as claimed. Office Action, at 4. Because the Office Action makes no mention of the claimed differential or single-ended coupling, the stated reason for the rejections is not proper. Moreover, it would not have been obvious to a skilled artisan to couple the claimed telecoil with an amplifier via a differential or single-ended coupling.

Claim 24 is allowable for at least the additional reason that Mead does not disclose an analog-to-digital converter for providing a digital output of a non-audio frequency signal. Nowhere does Mead teach or suggest a non-audio frequency signal, but rather explicitly discloses that the input signal is in the form of acoustical energy.

Claim 25 is allowable for at least the additional reason that Mead does not disclose a microcontroller for processing a non-audio frequency signal, the microcontroller providing functions for the operation of a hearing aid in response to the non-audio frequency signal. Nowhere does Mead teach or suggest a non-audio frequency signal, but rather explicitly discloses that the input signal is in the form of acoustical energy.

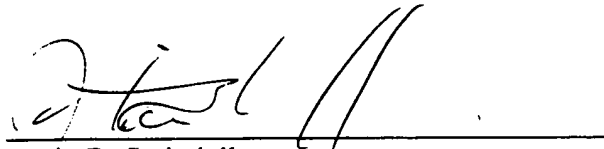
### **Conclusion**

It is the Applicants' belief that all of the claims are now in condition for allowance and action towards that effect is respectfully requested.

If there are any matters which may be resolved or clarified through a telephone interview, the Examiner is requested to contact the undersigned attorney at the number indicated.

No fees are believed to be due with this paper, however, the Commissioner is authorized to charge any additional fees which may be required (except the issue fee) to JENKENS & GILCHRIST, P.C., Deposit Account No. 10-0447 (47161-00016USPT).

Respectfully submitted,



Date: April 28, 2004

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09/970,399	10/03/2001	Miroslav Svajda	47161-00016	9667

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EXAMINER

NI, SUHAN

ART UNIT PAPER NUMBER

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DATE MAILED: 05/19/2004

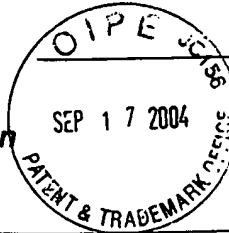
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DOCKETED

INIT. PB DATE: 5/26/04

ACTION: Doc DATE: 6/26/04

Deadline 8/26/04

**Advisory Action**

Application No.

09/970,399

Applicant(s)

SVAJDA ET AL.

Examiner

Suhan Ni

Art Unit

2643

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 28 April 2004 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

**PERIOD FOR REPLY** [check either a) or b)]

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
- b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on \_\_\_\_\_. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☐ The proposed amendment(s) will not be entered because:
- (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);
  - (b) ☐ they raise the issue of new matter (see Note below);
  - (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
  - (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_

3. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.
4. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☒ The a) ☐ affidavit, b) ☐ exhibit, or c) ☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: of the same reason and explanation in the final rejection.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☐ For purposes of Appeal, the proposed amendment(s) a) ☐ will not be entered or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: \_\_\_\_\_.

Claim(s) objected to: \_\_\_\_\_.

Claim(s) rejected: \_\_\_\_\_.

Claim(s) withdrawn from consideration: \_\_\_\_\_.

8. ☐ The drawing correction filed on \_\_\_\_\_ is a) ☐ approved or b) ☐ disapproved by the Examiner.
9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_.
10. ☐ Other: \_\_\_\_\_

*Suhan Ni*  
**SUHAN NI**  
**PRIMARY EXAMINER**

Westlaw.

2002 WL 1801466 (Bd.Pat.App & Interf.)  
(Cite as: 2002 WL 1801466 (Bd.Pat.App & Interf.))

Board of Patent Appeals and Interferences

Patent and Trademark Office (P.T.O.)  
\*1 EX PARTE FRANCIS J. MAGUIRE, JR.  
Appeal No. 1999-1344  
Application No. 08/364,718

NO DATE REFERENCE AVAILABLE FOR THIS DOCUMENT

FRANCIS J. MAGUIRE

WARE FRESSOLA VAN DER SLUYS & ADOLPHSON

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Before FLEMING, HAIRSTON and GROSS

Administrative Patent Judges

Fleming

Administrative Patent Judge

ON BRIEF

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the final rejection of claims 1-8, all the claims pending in the application.

The instant invention discloses an eye tracking method and apparatus that provides a new way to monitor the eye with respect to more than one coordinate system. An eye attitude monitor is combined with a head translatory position monitor in order to relate the eye translatory position as well as its attitude to an arbitrarily selected reference coordinate system. Appellant's specification ("Specification"), page 3. The term "attitude" means the angular rotations of an eye visual axis with respect to arbitrarily selected axes of an eye coordinate system. Specification, page 6. Eye attitude can mean up to three axes of rotation (pitch, roll, yaw) about an origin of an eye coordinate system. Specification, page 4. A head attitude monitor is added to relate the attitude of the eye to the

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arbitrarily selected reference coordinate system. Specification, page 7. The eye tracking apparatus tracks the attitude of one or both eyes with respect to a head attached to a body. Specification, page 4. The origin of the eye coordinate system is fixed in relation to the origin of a head coordinate system. Specification, page 2. The attitude of the head is monitored with respect to a selected first coordinate system such as the body. Specification, page 6, line 32, to page 7, line 1. The monitors provide sensed signals to a computer. Specification, page 7. The computer inputs the signals to perform eye-head coordinate transformations and provides a tracking or visual axis signal to a control device. Specification, page 8. The control device produces a signal that may be used for many purposes including positioning an image artifact and target acquisition for controlling a projectile. Specification, page 8.

Appellant's independent claim 1, reproduced below, is representative of the invention:

1. Apparatus, comprising:

an eye monitor, responsive to an eye direction, for providing an eye direction signal with respect to an associated head coordinate system;

a head translatory position monitor, responsive to a translatory position associated with a head translating with respect to a reference coordinate system, for providing a head translatory position signal;

a signal processor, responsive to the eye direction signal and the head translatory position signal, for providing the eye direction signal referenced to the reference coordinate system with respect to both head translatory position and eye direction; and

\*2 a control, responsive to the eye direction signal referenced to the reference coordinate signal, for providing a control signal.

In rejecting Appellant's claims, the Examiner relies on two references:

Lewis	4,028,725	Jun. 7, 1977
Beckman	5,383,990	Feb. 14, 1995
		(filed Apr. 23, 1993)

Claims 1-8 stand rejected under 35 U.S.C. § 103 as obvious over Lewis and Beckman. Rather than repeat the arguments of Appellant and Examiner, we refer the reader to the Appellant's Briefs [FN1] and Examiner's Answer [FN2] for the respective details thereof.

OPINION

With full consideration being given the subject matter on appeal, the Examiner's rejection and the arguments of Appellant and Examiner, for the reasons stated infra, we will reverse the Examiner's rejection of claims 1-8 under 35 U.S.C. § 103

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as obvious over Lewis and Beckman.

In rejecting claims under 35 U.S.C. § 103, the Examiner bears the initial burden of establishing a prima facie case of obviousness. In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). See also In re Piasecki, 745 F.2d 1468, 1471-72, 223 USPQ 785, 788 (Fed Cir. 1984)). The Examiner can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598. Only if this initial burden is met does the burden of coming forward with evidence or argument shift to the Appellant. See Oetiker, 977 F.2d at 1445, 24 USPQ2d at 1444. See also Piasecki, 745 F.2d at 1472, 223 USPQ at 788 ("After a prima facie case of obviousness has been established, the burden of going forward shifts to the applicant."). If the examiner fails to establish a prima facie case, the rejection is improper and accordingly merits reversal. In re Fine, 837 F.2d at 1074, 5 USPQ2d at 1598.

An obviousness analysis commences with a review and consideration of all the pertinent evidence and arguments. See Oetiker, 977 F.2d at 1445, 24 USPQ2d at 1444 ("In reviewing the examiner's decision on appeal, the Board must necessarily weigh all of the evidence and argument."). Accordingly, we now consider the claims on appeal.

\*3 In traversing the Examiner's rejection of the claims, the Appellant first argues that Beckman only discloses the monitoring of head attitude and actually teaches the suppression of the translatory position information from a head sensor. Brief at page 6. Next, Appellant asserts that there is no motivation to use sensed head translations with eye monitoring to be found in Lewis or Beckman either alone or in combination. Appellant argues that "[t]he speculations of the Examiner with regard to providing greater accuracy and enhanced control by using head translations do not come from Lewis or Beckman but from the Examiner." Brief at page 6. Additionally, Appellant asserts that Beckman and Lewis teach sensing head attitude, not head position. Brief at page 9. Finally, Appellant asserts that neither Lewis nor Beckman enables the signal processing carried out by the claimed signal processor. Brief at page 9.

The Examiner maintains that Lewis teaches an eye monitor, position monitor, signal processor and control. Examiner's Answer at page 3. However, the Examiner looks to the Beckman reference for the teaching of head translational movement and asserts that it would have been obvious to one having ordinary skill in the art to utilize the Beckman method for sensing both the translational and angular movements of the traveler's head in the monitoring system taught by Lewis to provide an accurate virtual image of a scene surrounding a vehicle because a virtual reality control system would sense the position and orientation of the traveler's head and adjust the projection parameters to maintain the illusion that the traveler is immersed in a real scene. Examiner's Answer at page 4.

We find that Lewis enables a means of coordinating the movement or control of a remote sensor with the movement of the remote observer's head or eyes. See Lewis, column 1, lines 23-26. Lewis teaches a high resolution vision system in which remotely located sensors controlled by head and eye tracking means generate signals that are transmitted to signal processing means on the helmet to produce a

display image having a wide field of view that is maintained on the operator's line of sight. See Lewis, column 1, lines 10-13. Beckman teaches a virtual reality flight control system having six degrees of freedom of acceleration or velocity control. Beckman, column 4, lines 30-35.

However, we find no objective teaching in either Lewis or Beckman that would lead one of ordinary skill in the art to combine the references. Lewis relates to the sensing of images outside an actual aircraft and addresses the problem of remotely sensing and displaying images within a pilot's focus. Consequently, Lewis' reference system merely involves the pilot's line-of-sight (LOS). Beckman involves a virtual reality flight control system and addresses the problem of flight simulation in outer space. Therefore, Beckman uses six degrees of freedom in a more complicated reference coordinate system that permits greater combinations of translations and rotations. Beckman and Lewis are directed to disparate teachings which address different problems and we find no reason or suggestion in either prior art reference to enable their combination in this obviousness analysis. We conclude therefore that the Examiner has failed to establish a prima facie case of obviousness.

\*4 When an obviousness determination is based on multiple prior art references, there must be a showing of some "teaching, suggestion, or reason" to combine the references. *Winner Int'l Royalty Corp. v. Wang*, 202 F.3d 1340, 1348, 53 USPQ2d 1580, 1586 (Fed. Cir.) cert. denied, 530 U.S. 1238 (2000). The Federal Circuit further instructs that "[t]he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." *In re Fritch*, 972 F.2d 1260, 1266 n.14, 23 USPQ2d 1780, 1783- 84 n.14 (Fed. Cir. 1992), citing *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). It is further established that "such a suggestion may come from the nature of the problem to be solved, leading inventors to look to references relating to possible solutions to that problem." *Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc.*, 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1630 (Fed. Cir. 1996), citing *In re Rinehart*, 531 F.2d 1048, 1054, 189 USPQ 143, 149 (CCPA 1976) (considering the problem to be solved in a determination of obviousness). The Federal Circuit reasons in *Para-Ordnance Mfg. Inc. v. SGS Importers Int'l Inc.*, 73 F.3d 1085, 1088-89, 37 USPQ2d 1237, 1239-40 (Fed. Cir. 1995), cert. denied, 519 U.S. 822 (1996) that for the determination of obviousness, the court must answer whether one of ordinary skill in the art who sets out to solve the problem and who had before him in his workshop the prior art, would have been reasonably expected to use the solution that is claimed by the Appellant. However, "[o]bviousness may not be established using hindsight or in view of the teachings or suggestions of the invention." *Para-Ordnance*, 73 F.3d at 1087, 37 USPQ2d at 1239, citing *W.L. Gore & Assocs., Inc. v. Garlock Inc.*, 721 F.2d 1540, 1548, 220 USPQ 303, 309 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). In addition, our reviewing court requires the Patent and Trademark Office to make specific findings on a suggestion to combine prior art references. *In re Dembiczak*, 175 F.3d 994, 1000-01, 50 USPQ2d 1614, 1617-19 (Fed. Cir. 1999). "The combination of elements from non-analogous sources, in a manner that reconstructs the applicant's invention only with the benefit of hindsight, is insufficient to present a prima facie case of obviousness." *Oetiker*, 977 F.2d at 1445, 24 USPQ2d at 1446.

\*5 Based on the evidence and arguments presented, and the pertinent law in this

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matter, we find that the Examiner has failed to establish a prima facie case of unpatentability with respect to claims 1-8. Accordingly, we reverse the Examiner's rejections of claims 1-8 as unpatentable over Lewis and Beckman.

REVERSED

BOARD OF PATENT APPEALS AND INTERFERENCES

MICHAEL R. FLEMING

Administrative Patent Judge

KENNETH W. HAIRSTON

Administrative Patent Judge

ANITA PELLMAN GROSS

Administrative Patent Judge

FN1. Appellant filed an Appeal Brief ("Brief") on April 30, 1998. In response to the Examiner's Answer, Appellant filed a Reply Brief on August 27, 1998.

FN2. The Examiner, in response to Appellant's Brief, filed an Examiner's Answer on June 24, 1998.

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END OF DOCUMENT